

What is claimed is:

1. A method for improved characterization of bi-directional color reproduction devices, comprising:
 - a) obtaining a gamut of achievable colors that the printing device is expected to reproduce;
 - b) defining at least one color test target containing a plurality of color patches within the achievable gamut;
 - c) generating a color calibration table specific to a first direction of print;
 - d) generating a color calibration table specific to a second direction of print;
 - e) determining the intersection of the gamuts of achievable colors in left-to-right mode and in right-to-left mode;
 - f) defining a gamut smaller than the gamut of the intersection; and
 - g) iteratively generating calibration tables using the defined smaller gamut as a common gamut starting point.
2. A method for improved characterization, as in **claim 1**, wherein the color test target contains a range of color patches spanning at least one color space.
3. A method for improved characterization, as in **claim 1**, wherein some of the plurality of color patches lay outside the achievable gamut of the printing device.
4. A method for improved characterization, as in **claim 1**, wherein the determination of the intersection of the gamuts comprises identifying a distance between two colors in color space.

5. A method for improved characterization, as in **claim 1**, wherein the defining of a smaller gamut involves clipping the gamut in both direction to the point of intersection.
6. A method for improved characterization, as in **claim 1**, further comprising, removing matched color pairs from a target page for the next iteration.
7. A method for improved characterization, as in **claim 1**, further comprising, computing a mapping from one color space to another.
8. A system for improved characterization of bi-directional color reproduction devices, comprising:
 - a process; memory; storage media; and
 - a computer program executing the instructions set comprising:
 - obtaining a gamut of achievable colors that the printing device is expected to reproduce;
 - defining at least one color test target containing a plurality of color patches within the achievable gamut;
 - generating a color calibration table specific to a first direction of print;
 - generating a color calibration table specific to a second direction of print;
 - determining the intersection of the gamuts of achievable colors in left-to-right mode and in right-to-left mode;
 - defining a gamut smaller than the gamut of the intersection; and
 - iteratively generating calibration tables using the defined smaller gamut as a common gamut starting point.

9. A method for improved characterization, as in **claim 8**, wherein the color test target contains a range of color patches spanning at least one color space.
10. A method for improved characterization, as in **claim 8**, wherein some of the plurality of color patches lay outside the achievable gamut of the printing device.
11. A method for improved characterization, as in **claim 8**, wherein the determination of the intersection of the gamuts comprises identifying a distance between two colors in color space.
12. A method for improved characterization, as in **claim 8**, wherein the defining of a smaller gamut involves clipping the gamut in both direction to the point of intersection.
13. A method for improved characterization, as in **claim 8**, further comprising, removing matched color pairs from a target page for the next iteration.
14. A method for improved characterization, as in **claim 8**, further comprising, computing a mapping from one color space to another.